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ART UNIT	**PAPER NUMBER**
1637	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/852,968	CHAN, EUGENE Y.	
	Examiner	Art Unit	
	STEPHANIE K. MUMMERT	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *10 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *178-181* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *178-181* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 10, 2008 has been entered.

Applicant's amendment filed on December 10, 2008 is acknowledged and has been entered. Claims 1-177 have been canceled. Claims 178-181 have been added. Claims 178-181 are pending.

Claims 178-181 are discussed in this Office action.

All of the amendments and arguments have been thoroughly reviewed and considered but are not found persuasive for the reasons discussed below. Any rejection not reiterated in this action has been withdrawn as being obviated by the amendment of the claims. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This action is made NON-FINAL.

New Grounds of Rejection as necessitated by amendment

Priority

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 60/037921 filed February 12, 1997, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The newly added claims specifically recite "emits the fluorescence signal in the absence of fluorescence resonance energy transfer". However, the prior filed application is directed entirely to detection using RET or FRET detection. A careful review of the disclosure did not indicate the embodiment(s) claimed herein, where the marker is exposed to electromagnetic radiation and the signal is detected. Therefore, the claims will be afforded the filing date of the priority document with proper support for the claims, 60/064687, filed November 5, 1997.

Claim Interpretation

The term "analyzing a nucleic acid" is not defined in the specification or in the claims. The claims also do not recite a step where the nucleic acid is specifically analyzed following collection of the signal data. The term is described in the specification in the following manner in the specification: "The method involves the steps of moving a plurality of individual units of a

polymer of linked units with respect to a station and detecting sequentially signals arising from a detectable physical change in the polymer or the station as individual units pass the station to analyze the polymer" (paragraph 41 of specification). The specification also states, "In addition to information about a specific unit the methods of the invention may be used to identify greater than one unit at a time in order to provide information about a polymer. In one aspect the method is carried out by providing a labeled polymer of linked units, detecting signals from labeled unit specific markers of less than all of the linked units, and storing a signature of the signals detected to analyze the polymer. In this aspect of the invention each unit of the labeled polymer may be labeled with a unit specific marker or less than all of the units may be labeled with a unit specific marker" (paragraph 295 of specification). Therefore, the claim term can encompass either sequencing of all linked units or detection of a single unit specific marker.

In a broad interpretation, the term analyzing will be interpreted as reading on detection of a single type of unit specific marker, for simple detection of the presence a nucleic acid. For this interpretation, an art rejection will be made. In a more narrow interpretation, the term analyzing will be interpreted as reading on identification of the sequence of a nucleic acid. An enablement rejection over the claims will be applied over the more narrow interpretation of the term.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re*

Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 178-181 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 19, 29, 51-52, 54, 59-60, 80, 106-107 and 120-123 of U.S. Patent No. 6,355,420 ('420 patent herein). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are not patentably distinct.

While the claims are not identical, the claims are not patentably distinct from one another. Independent claims 1, 29, 51 and 52 are all directed to methods of analyzing polymers through the detection of electromagnetic radiation. Specifically in claims 51 and 52, the polymer is labeled with a unit specific marker and signals are stored to analyze the polymer, wherein the polymer comprises nucleic acid (claim 60). The claims of the '420 patent are nearly identical to the instant claims, including the optical waveguide (see claims 54 and 80) and the unit specific marker (claims 51, 52, 106-107 and 120-123). The main difference between the instant claims and the '420 patent is that the claims of the '420 patent are directed to a polymer and the instant claims are directed to a nucleic acid specifically. However, dependent claims limit the polymer to a nucleic acid (claims 19 and 60). Therefore, while the claims are not identical, the '420 patent and the claims of the instant application are not patentably distinct.

Claim Rejections - 35 USC § 112

1. Claims 178-181 are rejected under 35 U.S.C. 112, first paragraph, because the specification is not enabling for the labeling of individual units in a polymer for determining the identity of each individual unit of a nucleic acid. The specification is also not enabled for the identification of individual units through detection of signals from less than all linked units in a polymer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in *In re Wands*, 8 USPQ2d 1400 (CA FC 1988). *Wands* states at page 1404,

"Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in Ex parte Forman. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims."

The nature of the invention

Claim 178 is directed to a method for analyzing a nucleic acid comprising providing a nucleic acid which is labeled with a unit specific marker, detecting a non-FRET fluorescent signal, where the nucleic acid is moved relative to electromagnetic radiation by a polymerase. Claim 179 is directed to a method for identifying a unit specific marker bound to a nucleic acid. The method comprises moving a nucleic acid past electromagnetic radiation using a polymerase

and detecting the non-FRET fluorescent signal from the labeled unit specific marker. The invention is in a class of invention which the CAFC has characterized as "the unpredictable arts such as chemistry and biology." Mycogen Plant Sci., Inc. v. Monsanto Co., 243 F.3d 1316, 1330 (Fed. Cir. 2001).

The breadth of the claims

The claims encompass a method directed to analyzing a nucleic acid, or identifying a unit specific marker bound to a nucleic acid, comprising moving the polymer relative to an electromagnetic radiation source, obtaining polymer-dependent impulses or signals and determining the identity of the units based on the signal generated. However, the claims are very broad and do not clearly state what type of analysis is carried out for the nucleic acid polymer. Therefore, the broad claims encompass embodiments where the nucleic acid is sequenced, through detection of sequential markers, and embodiments where the nucleic acid is simply detected.

Quantity of Experimentation and Guidance in the Specification

The quantity of experimentation in this area is large.

First, regarding labeling with unit specific markers, the specification states "As used herein a 'unit specific marker' is a compound which specifically interacts with one or more units of a polymer and is capable of identifying those units (paragraph 295, specification)." This definition encompasses both fluorescent extrinsic labels, including labels incorporated into the nucleic acid and those labels bound to the nucleic acid as described broadly in the same portion

of the specification. While the specification states that unit specific markers can comprise "but are not limited to sequence specific major and minor groove binders and intercalators, sequence specific DNA and peptide binding proteins, sequence specific peptide-nucleic acids, etc. Many such unit specific markers exist and are well known to those of skill in the art" (paragraph 296), the claims do not explicitly recite or exclude that the unit specific marker does not comprise an incorporated label. Therefore, both marker embodiments much be considered as reading on the claims.

Therefore, regarding the potential for labeling individual units of a polymer such as a nucleic acid, either extrisically or intrinsically, the specification states that labeling steps which require "that all four bases in the DNA be tagged with different fluorophores" would be "extremely unfavorable" due to steric hindrance (p.2, paragraph 16 of PgPub). Regarding four-color labeling schemes, the specification states "A four nucleotide labeling scheme can be created where the A's, C's, G's, and T's of a target DNA is labeled with different labels. Such a molecule, upon traversing an interaction station, will generate a linear order of signals which correspond to the linear sequence of nucleotides on the target DNA" (paragraph 266 of PgPub). The specification also states that some of the nucleotides may be intrinsically labeled to reduce steric hindrance and states "It is also preferred that when extrinsic labels are used with the four nucleotide labeling scheme that the labels be small and neutral in charge to reduce steric hindrance" (paragraph 266 of PgPub). Clearly, there would be a high degree of experimentation necessary to effectively label (intrinsically or extrinsically), detect or identify each of the linked units of the polymer.

Furthermore, the specification does not clearly establish the practice of identifying the specific units through the detection of signal from less than all linked units in the polymer. While the specification states, "In addition to information about a specific unit the methods of the invention may be used to identify greater than one unit at a time in order to provide information about a polymer. In one aspect the method is carried out by providing a labeled polymer of linked units, detecting signals from labeled unit specific markers of less than all of the linked units, and storing a signature of the signals detected to analyze the polymer. In this aspect of the invention each unit of the labeled polymer may be labeled with a unit specific marker or less than all of the units may be labeled with a unit specific marker (paragraph 295)", the specification does not make it clear that the "information about a polymer" includes the identification of individual units of a polymer, or how the signatures are correlated from the polymer to the individual units. Therefore the specification also does not make it clear how to implement this embodiment of the method and it would require undue experimentation to achieve this embodiment of the method based only on the teaching of the specification.

While the term "analyzing" is not defined, the term is described as "The method involves the steps of moving a plurality of individual units of a polymer of linked units with respect to a station and detecting sequentially signals arising from a detectable physical change in the polymer or the station as individual units pass the station to analyze the polymer" (paragraph 41 of specification). The specification also states, "In addition to information about a specific unit the methods of the invention may be used to identify greater than one unit at a time in order to provide information about a polymer. In one aspect the method is carried out by providing a labeled polymer of linked units, detecting signals from labeled unit specific markers of less than

all of the linked units, and storing a signature of the signals detected to analyze the polymer. In this aspect of the invention each unit of the labeled polymer may be labeled with a unit specific marker or less than all of the units may be labeled with a unit specific marker" (paragraph 295 of specification). Therefore, the claim term can encompass either sequencing of all linked units or detection of a single marker. Furthermore, the newly added claims recite that the fluorophore "emits the fluorescence signal in the absence of fluorescence resonance energy transfer".

The unpredictability of the art and the state of the prior art

The current state of the art indicates that a great deal of further experimentation and inventiveness would be required to implement the methods claimed by Applicant.

Regarding the practice of the method generally, including labeling of individual nucleotides and providing information about adjacent linked units, the prior art does not teach any examples where this method has been implemented successfully. The closest art, Braslavsky et al. (PNAS, 2003, vol. 100, no. 7, p. 3690-3694), teaches "repeated incorporation of fluorescently labeled nucleotides into individual DNA strands with single base resolution, allowing the determination of sequence fingerprints up to 5 bp in length (Abstract). While Braslavsky provides single base resolution, even this example had to overcome a "confounding factor in previous attempts to sequence single DNA molecules" which has been "an inability to control background fluorescence and fluorescent impurities. Braslavsky overcame this limitation by using "a combination of evanescent wave microscopy and single pair fluorescence resonance energy transfer (spFRET; refs 24-26) to reject unwanted noise" (p. 3960, col. 1-2). While this is evidence that single base resolution using FRET can be accomplished, this effort does not

provide the information of single linked units that are previously labeled and instead reads the sequence as each individual nucleotide is incorporated into a template molecule (Figures 3 and 5).

Currently, the state of the art even after the filing of the instant application appears to be at the point where single molecules can be transported and detected at the single molecule level. Details such as length, strandedness, conformation, heterogeneity and some sequence information can be established (p. 580-585 of Rhee), however obtaining sequence information at the individual linked unit level, particularly along the entire length of a polymer such as nucleic acid appears highly unpredictable.

Therefore, the current state of the art demonstrates that providing a 'signal generating unit' for each individual unit of a polymer, nucleic acid particularly, would be subject to a high degree of unpredictability. Furthermore, regarding the practice of the invention wherein the station is embedded within a nanochannel, the current state of the art suggests a high degree of unpredictability and potentially a lack of function as applies to the method of claim 1.

Working Examples

The specification has no working examples.

Level of Skill in the Art

The level of skill in the art is deemed to be high.

Conclusion

Thus considering the breadth of the claims, as encompassing the analysis of nucleic acids, requiring that one or more individual units within a polymer be labeled with a light emissive compound or with an 'intrinsic' label, and considering that the method of the invention is found in an art whose nature is identified as unpredictable, the unpredictability of that art, the large quantity of research required to define unpredictable variables, the lack of guidance provided in the specification, the presence of no working examples and the negative teachings in the prior art balanced only against the high skill level in the art, it is concluded that it would require undue experimentation for one of skill in the art to perform the method of the claim as written.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 178-179 are rejected under 35 U.S.C. 102(b) as being anticipated by Rigler et al. (Journal of Biotechnology, 1995, vol. 41, p. 177-186). Rigler teaches single molecule detection using fluorescence spectroscopy (Abstract).

With regard to claim 178, Rigler teaches a method for analyzing a nucleic acid comprising providing a nucleic acid, labeled with a unit specific marker, detecting a fluorescent signal from the unit specific marker bound to the nucleic acid after exposure to electromagnetic radiation, storing a signature of signals to analyze the nucleic acid, wherein the nucleic acid is

moved relative to the electromagnetic radiation by a polymerase (p. 182, col. 2 to p. 183, col. 1, see also, legend Figure 7, where M13-DNA molecule is labeled with rhodamine dUTP using an 18-mer primer using Klenow polymerase and where the where the nucleic acid moves during labeling with the polymerase), and the unit specific marker is labeled with a fluorophore that emits the fluorescent signal in the absence of fluorescence resonance energy transfer (Figure 7 legend, where rhodamine emits a fluorescent signal, as detected in the figure; p. 183, col. 1, where the phage DNA is shown in the form of 'specific' photon bursts).

With regard to claim 179, Rigler teaches a method for identifying a unit specific marker bound to a nucleic acid comprising moving a nucleic acid past electromagnetic radiation using a polymerase, exposing a labeled unit specific marker bound to the nucleic acid to the electromagnetic radiation (p. 182, col. 2 to p. 183, col. 1, see also, legend Figure 7, where M13-DNA molecule is labeled with rhodamine dUTP using an 18-mer primer using Klenow polymerase and where the where the nucleic acid moves during labeling with the polymerase), and

detecting an electromagnetic radiation signal from the labeled unit specific marker in the absence of fluorescence resonance energy transfer (Figure 7 legend, where rhodamine emits a fluorescent signal, as detected in the figure; p. 183, col. 1, where the phage DNA is shown in the form of 'specific' photon bursts).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 180-181 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rigler as applied to claims 178-179 above, and further in view of Vurek et al. (US Patent 5,119,463; June 1992). Rigler teaches single molecule detection using fluorescence spectroscopy (Abstract).

Regarding claims 180-181, while Rigler teaches an apparatus comprising a laser for detection, Rigler is not specific regarding the presence of a waveguide. Vurek teaches the use of a waveguide in the detection (Abstract).

With regard to claim 180-181, Vurek teaches an embodiment of claim 178-179, wherein the electromagnetic radiation is transported through a waveguide (Abstract, Figure 1).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a waveguide of the type described by Vurek into the method of fluorescence detection of Rigler to arrive at the claimed invention with a reasonable expectation for success. As taught by Vurek, "The optical waveguide carries light signals at different wavelengths for monitoring oxygen concentration, carbon dioxide concentration, and pH levels. The probe is designed so that light signals used to monitor carbon dioxide concentration are optically prevented from impinging on the sensor used to monitor (Abstract)". Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to have incorporated a waveguide of the type described by Vurek into the method of fluorescence detection of Rigler to arrive at the claimed invention with a reasonable expectation for success.

Response to Arguments

Applicant's arguments filed December 10, 2008 have been fully considered but they are not persuasive.

Applicant traverses the rejection of claims as lacking enablement. Applicant notes "in a good faith effort to move prosecution forward, Applicant has presented new claims that are directed to analysis of labeled unit specific markers bound to a nucleic acid and that give rise to electromagnetic radiation signals such as fluorescent signals" (p. 3 of remarks). Applicant notes that the new claims "recite fluorescent signal or electromagnetic signal in the absence of fluorescence resonance energy transfer" and argues that "the teachings of Chan… Rhee… Braslavsky are also rendered moot". Regarding Braslavsky, Applicant argues "the pending claims exclude the occurrence of FRET from the claimed method" and "that this reference also is not relevant to the pending claims" (p. 4 of remarks). Finally, Applicant argues "the claims do not require simultaneous labeling of adjacent individual nucleotides of the nucleic acid, and thus there is no steric hindrance between adjacent nucleotides" (p. 5 of remarks).

Applicant's effort and significant amendment to the claims are noted, and appreciated. However, portions of the enablement rejection remain applied over the newly recited claims, because, as noted in the claim interpretation and the enablement rejection over a more narrow interpretation of the claims, the issues raised in the previous enablement rejection still apply over the newly recited claims because the claims are broadly claimed so that the method is not clearly recited, other than to require that the polymer is nucleic acid and to exclude FRET signals.

First, the claims are directed to nucleic acids specifically and the nucleic acid is labeled with a unit specific marker. Is this marker specific for a single nucleotide or does it label

multiple nucleotides simultaenously? The claims are also broadly directed to "analyzing" the nucleic acid. As noted in the claim interpretation and in the enablement rejection - the specification teaches multiple embodiments, including simple “bulk" detection of nucleic acids and analysis that includes determining the sequence of the polymer/nucleic acid. Finally, it is also not clear how the signals are translated into the “analysis” of the nucleic acid. Therefore, due to the breadth of the claims, the enablement rejection stands (as amended) in response to the newly recited claims. Further, regarding the statement by Applicant that the claims do not require simultaneous labeling of adjacent individual nucleotides, as noted above, the claims are broad enough to encompass these embodiments of the claims, even if they are not explicitly recited, particularly due to the inclusion of the broad term analyzed.

Finally, regarding Braslavsky, despite the exclusion of FRET labels, the teaching of Braslavsky applies because the claims encompass sequencing the nucleic acid and Braslavsky demonstrates that the type of analysis Applicant proposes is associated with undue experimentation. Eventhough Braslavsky teaches detection of fluorescent signal through spFRET, Braslavsky also teaches the inherent difficulties in analyzing and sequencing nucleic acids at the level of single molecules. Therefore, this reference remains in the body of the enablement rejection.

Finally, it is reiterated that both enablement and rejections over art were applied over the claims due to the breadth of the terminology of the newly added claims. If the analysis is intended to imply simple detection, the claim is rejected over art, broadly. If the analysis is intended to imply detection of sequence information for the linked units in the nucleic acid, then the claims are not properly enabled for the reasons stated in the enablement rejection.

Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nie et al. (1995, Anal. Chem., 67(17), p. 2849-2857) teaches real time detection of single molecules using confocal fluorescence microscopy (Abstract).

Conclusion

All claims stand rejected. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHANIE K. MUMMERT whose telephone number is (571)272-8503. The examiner can normally be reached on M-F, 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Stephanie K. Mummert/
Patent Examiner, Art Unit 1637

SKM